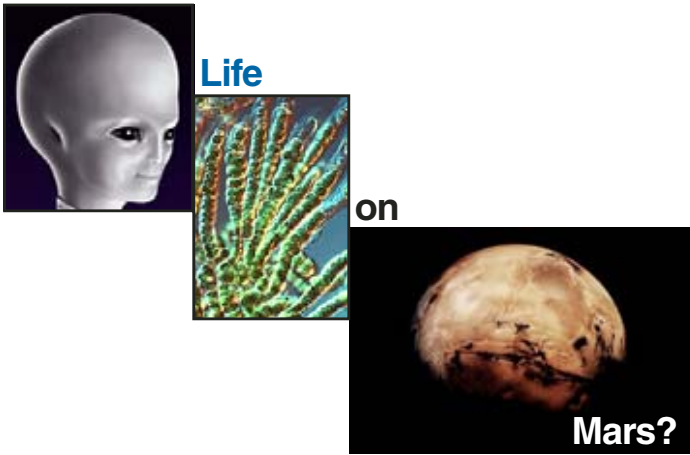




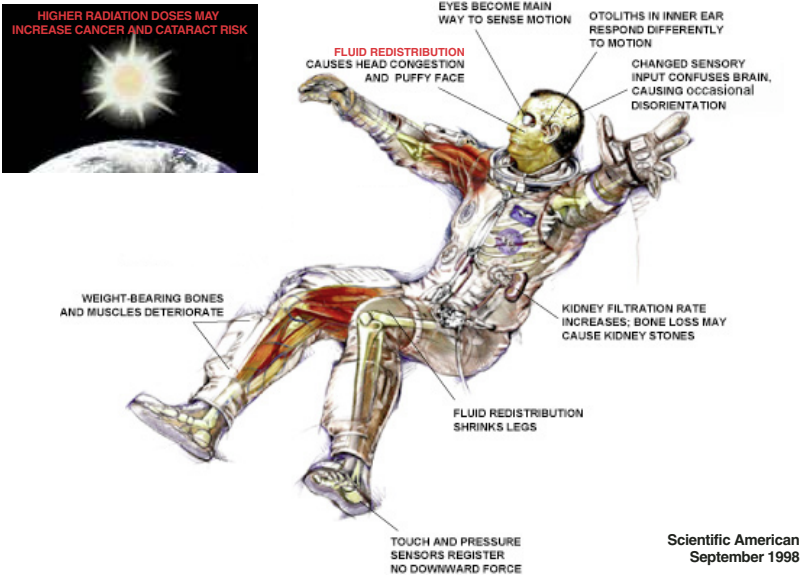
Global Picture

- **The NASA Vision:**
To improve life here,
To extend to there,
To find life beyond.
- **The NASA Mission:**
To understand and protect our home planet,
To explore the universe and search for life,
To inspire the next generation of explorers...
as only NASA can!

Is there...



Effects of Space Travel on the Human Body are Similar to that of Aging



Scientific American
September 1998

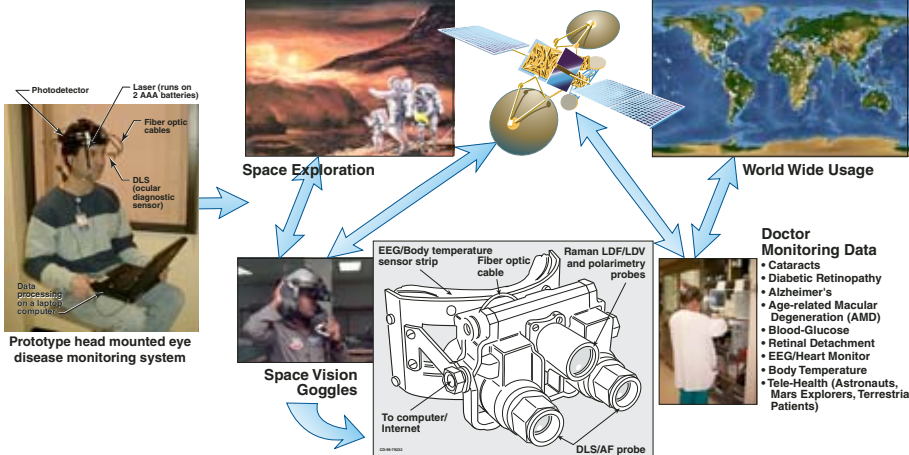
AIM: DIAGNOSE DISEASES NON-INVASIVELY LONG BEFORE CLINICAL SYMPTOMS APPEAR

Optical Technique	Disease	Potential Counter-measures	Collaborator (Status)
Dynamic Light Scattering (DLS)	Cataract Radiation Damage Diabetes Vitreopathy Uveitis Cholesterol Alzheimer's	Anti-oxidants (red wine, green tea, Vitamins), Aldose Reductase Inhibitors, Pentethine, Sun glasses Better Protective Shields Anti-inflammatories, anti-oxidants, hormone replacement therapies	NIH (Clinical) Oakland/University/(Animals) FDA/(Animals) Doheny/(Cadavers) NIH/(Experimental) Harvard, Mass General, Brigham Womens (Animals)
Cornical Auto-Fluorescence	Diabetic Retinopathy	Blood-glucose management	University of Brescia, Italy/Clinical
Laser Doppler Velocimetry (LDV)	Retinal Diseases (AMD) (Diabetic retinopathy)	Better optic nerve head & choroidal flow Diabetes control	Doheny Eye Institute (Experimental)
Raman	Age-related Macular Degeneration (AMD) Measure: Carotenoid Pigments	Lutein (spinach, broccoli, etc) and Zeaxanthin (peaches, corn, etc).	Doheny Eye Institute (Experimental)
Polarimetry	Diabetes	Blood-glucose monitoring (Better Compliance)	University of Brescia, (Experimental)
Oximetry	Diabetes, Stroke, Trauma		University Hospital/CWRU

NASA developed compact fiber optic probes

Present and Future

Remote Health Monitoring: For the Benefit of All Human Kind



CPR: Clinical Capabilities (Effective Countermeasures)

Distinguished Collaborators



Manuel B. Datiles M.D.
NEI/NIH



Sam Zigler, Ph.D.
NEI/NIH



Jerry Sebag, M.D.
Doheny Eye Clinic



Michelle Chenault, Ph.D.
FDA



Luigi Rovati, Ph.D.
University of Brescia



Frank J. Giblin, Ph.D.
Oakland University